



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,167	10/23/2001	Bert Boehler	P01,0335	7809

26574 7590 05/21/2004

SCHIFF HARDIN, LLP  
PATENT DEPARTMENT  
6600 SEARS TOWER  
CHICAGO, IL 60606-6473

EXAMINER

THAI, CUONG T

ART UNIT	PAPER NUMBER
----------	--------------

2173

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/038,167

Applicant(s)

BOEHLER ET AL.

Examiner

CUONG T THAI

Art Unit

2173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) None is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 1 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 2173

## **DETAILED ACTION**

1. Claims 1-8 are presented for examination.
2. The Information Disclosure Statement (IDS) filed on March/25/2002 have been received and fully considered.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly point out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failings to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 9-10 and lines 10-11, "said image signals" should be "said image data for generating input signals" to maintain consistency with lines 5-6 of claim 1.

Claim 6 lacks of antecedence for "the vertical". It is also not clear to the Examiner whether "the vertical" relates to "vertical object" or "vertical direction". Applicant should clarify what the vertical relate to. During the process of examination, the Examiner treated the vertical related to the vertical direction of Y-axis.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2173

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patent ability shall not be negative by the manner in which the invention was made.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (USPN: 5,954,650) hereinafter Saito in view of Nakai et al. (USPN: 6,587,131) hereinafter Nakai.

As per claim 1, Saito discloses a diagnostic device comprising:

An arrangement for generating raw data representing an object is taught by Saito as the technique of in display area 2, the image display area 1 is divided into three sections, namely, an upper part, a middle part and a lower part. An image imaged by an X-ray CT apparatus, for example, is displayed on the upper part as a base area, an image imaged by an MRI apparatus, for example, is displayed on the middle part as a match area 4 (see col. 4, lines 1-6 and see Fig. 1);

A computer supplied with said raw data for calculating image data from said raw data is taught by Saito as the technique of a display screen of an image display section is divided into an image display area and operation panel display area 2, the image display area 1 is divided into three sections, namely, an upper part, a middle part and a lower part. An image imaged by an X-ray CT apparatus, for example, is displayed on the upper part as a base area, an image imaged by an MRI apparatus, for example, is displayed on the middle part as a match area 4 (see col. 3 line 66 to col. 4 line 6 see Fig. 1);

An imaging system connected to said computer and supplied with said image data for generating input signals from said image data is taught by Saito as the

Art Unit: 2173

technique of image display section 21 connected to CPU 27 and supplied with Image Input Interface 25 (see Fig. 3);

An input device connected to said imaging system and having a user operable mouse is taught by Saito as the technique of pointing unit 24 including mouse, keyboard connected to image display section 21 (see Fig. 3);

A display unit connected to said imaging system and supplied with said image data for generating input signals for displaying an image containing said object dependent on said image data for generating input signals is taught by Saito as the technique of a display screen of an image display section is divided into an image display area and operation panel display area 2, the image display area 1 is divided into three sections, namely, an upper part, a middle part and a lower part. An image imaged by an X-ray CT apparatus, for example, is displayed on the upper part as a base area, an image imaged by an MRI apparatus, for example, is displayed on the middle part as a match area 4 (see col. 3 line 66 to col. 4 line 6 see Fig. 1);

Said imaging system allowing influencing of the display of said image on said display unit by a plurality of control functions via said mouse is taught by Saito as the technique of the operation panel display 2 is composed of a control area 6, a rendering area 7, a mouse mode area 8 (see col. 4, lines 12-14), wherein the mouse mode area 8 is provided with mouse mode selecting keys 43 for selecting respective modes, mentioned later, and a display panel 49 to be displayed according to a mode selected by the mouse mode selecting keys 43 (see col. 4, lines 28-32).

Saito, however, does not disclose the limitation of said input device having a detector which detects a movement of said mouse in one of a plurality of predetermined directions and which selects one of said control functions, dependent on one of said plurality of predetermined directions, to alter the display of said image on said display unit.

Nakai discloses the limitation of said input device having a detector which detects a movement of said mouse in one of a plurality of predetermined directions and which selects one of said control functions, dependent on one of said plurality of predetermined directions, to alter the display of said image on said display unit as the technique of a method for assisting a user to operate a pointer so as to move the pointer onto a desired object by a pointing device. This method comprises the steps of detecting a pointer movement direction in which the user wants to move the pointer, in accordance with a movement of the pointer by the pointing device; displaying candidate objects located within a predetermined range of the pointer movement direction; and selecting the object from the displayed candidate objects (see col. 2, lines 44-52), wherein the method is used by switching between an active state in which a system for implementing the assisting method is on and an inactive state in which the system for implementing the assisting is off (see col. 2 line 67 to col. 3 line 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Nakai's teaching of detecting a pointing movement direction for altering or switching states appearance of objects into that Saito invention. By doing so, the system would be enhanced by allowing user to control the appearance

Art Unit: 2173

state of desired item by using a pointing device. Thus, the system would provide an enhance tool in graphical based user interface to an end user.

As per claim 2, Saito discloses the invention wherein said arrangement for generating raw data comprises an arrangement for generating raw data representing a volume of said object is taught by Saito as the technique of a three dimensional pseudo image is formed based on the coaxial tomogram data for plural pieces in the image processing section (see col. 6, lines 1-3), wherein said computer comprises a computer for calculating image data representing a three-dimensional image from said raw data wherein said imaging system comprises an imaging system for generating image signal from said image data and wherein said detector alters the display of said three-dimensional image on said display unit dependent on said movement of said mouse in one of said plurality of predetermined directions as the technique of the CPU 27 calculates a coordinate transform matrix such that the positions of the fit points set on the base images coincide with the positions of the corresponding fit point set on the match images, and aligns the match images with the base images based on the coordinates transformation matrix and displays them, and composes both the aligned images so as to form fusion images (see col. 22, lines 14-21), an electrical configuration of a medical image processing apparatus as shown in Fig. 3, and it has an image display section 21 composed of a monitor unit for displaying images, operation panel, etc. in the above area, a driver, etc., an image processing section 22 is forming a three dimensional pseudo image based on a plurality of two dimensional images imaged by

Art Unit: 2173

the modalities such as the X-ray CT apparatus and MRI apparatus so as to display the three dimensional image on the image display section 21 (see col. 5, lines 16-19), and fit point changing keys 81 for changing the fit points displayed on the fit point coordinate display section 82, and a delete key 83 for canceling the fit points set to the base images displayed on the fit point number display section 80 (see col. 20, lines 19-24). This claim is therefore rejected for the reasons as set forth above.

As per claim 3, Saito discloses the limitation of wherein said control functions are selected from the group consisting of rotating said object in said three dimensional image, zooming of said object in said three dimensional image, rotating a clip plane in said three dimensional image, and displacing a clip plane in said three dimensional image as the technique of control functions of mouse mode for Rotate, Zoom (see Fig. 14), Rotate clip of any of Plane A, Plane B, and Plane C (see Fig. 2), and select any of Plane A, Plane B, and Plane C button (see Fig. 2). This claim is therefore rejected for the reason as set forth above.

As per claim 4, the limitation of wherein said detector automatically switches from one of said control functions to another upon a brief actuation of said mouse in said one of plurality of predetermined directions is taught by Saito as the technique of when the operator clicks the display mode switching key 41, the CPU 27 switches the display mode from the MPR display mode which is initial setting state to the surface display



Art Unit: 2173

mode (see col. 19, lines 50-53). This claim is therefore rejected for the reasons set forth above.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (USPN: 5,954,650) hereinafter Saito in view of Nakai et al. (USPN: 6,587,131) hereinafter Nakai and further in view of Yamamoto (USPN: 6,725,215).

As per claim 5, Saito-Nakai disclose the invention substantial as claimed above. Saito-Nakai, however, do not disclose the limitation of wherein said detector comprises a detector for detecting four defined directions, respectively corresponding to different control functions, by gesture selection.

Yamamoto discloses the limitation of a detector for detecting four defined directions, respectively corresponding to different control functions, by gesture selection as the technique of the set of cursor keys 302 comprises an up-move key 311, a down-move key 313, a left-move key 312 and a right move key 314 for moving a cursor in the up, down, left and right directions, respectively (see col. 11, lines 43-46), channel 15 will be sequentially selected every time an up-move key is presses (see col. 11, lines 57-58), the down-move key 313 to change the channel number (see col. 12, lines 9-10), and when the user operation panel including the up/down and left/right keys for moving the cursor in the corresponding directions as shown in Fig. 3, the cursor movement operation in the left/right direction may be assigned for the movement operation along the time axis. For example, the left-move key may be assigned to the shifting operation toward a program just before the current program in the virtual channel, and the right-

Art Unit: 2173

move key may be assigned to the shifting operation toward a program just alter the current program in the virtual channel (see col. 12, lines 44-53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Yamamoto's teaching of a detector for detecting four defined directions, respectively corresponding to different control functions, by gesture selection into that of Saito-Nakai combined invention. By doing so, the system would be enhanced by allowing user to change the content of the data based on selection detected by keyed control direction.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (USPN: 5,954,650) hereinafter Saito in view of Nakai et al. (USPN: 6,587,131) hereinafter Nakai and further in view of Rosenberg (USPN: 6,259,382).

As per claim 6, Saito-Nakai disclose the invention substantial as claimed above. Saito-Nakai, however, do not disclose the limitation of wherein said plurality of predetermined directions are respectively oriented at angle 45 degree relative to the vertical direction of the Y axis.

Rosenberg discloses the limitation of plurality of predetermined directions are respectively oriented at angle 45 degree relative to the vertical direction of the Y axis as the technique of constraining motion to perpendicular or 45-degree angle directions (see col. 32, lines 64-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Rosenberg's teaching of 45-degree angle constraining

Art Unit: 2173

directions into that of Saito-Nakai combined invention. By doing so, the system would be enhanced by providing certain edges or regions on the object. Thus, when a cursor or a mouse movement passes through certain region, it would provide feedback to its end user.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (USPN: 5,954,650) hereinafter Saito in view of Nakai et al. (USPN: 6,587,131) hereinafter Nakai and further in view of Roberts (USPN: 6,601,055).

As per claim 7, Saito-Nakai disclose the invention substantial as claimed above. Saito-Nakai, however, do not disclose the limitation of upon right-clicking of said mouse causes a text menu to be displayed on said display which symbolizes said plurality of predetermined directions and includes associated text explanations.

Roberts discloses the limitation of upon right-clicking of said mouse causes a text menu to be displayed on said display which symbolizes said plurality of predetermined directions and includes associated text explanations as the technique of the user can right-click with the mouse on the node name and obtain detailed information on that node. For example, if the user viewing a screen like Fig. 45 were to click on the "Age in 5 year intervals" box 26, the user may be presented with a screen like the one depicted in Fig. 46 (see col. 45, lines 35-40 and see Fig. 45-46) and the user can click a button on the group of buttons associated with text explanation of: Breast Cancer, Risk Factor, Physical Hx, and Mammography (see Fig. 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Roberts' teaching of upon right-clicking of said mouse

Art Unit: 2173

causes a text menu to be displayed on said display which symbolizes said plurality of predetermined directions and includes associated text explanations into that of Saito-Nakai combined invention. By doing so, the system would be enhanced by providing detailed text menu buttons tool to an end user wherein the end user can easily perform selection by single click operation.

As per claim 8, Saito-Nakai disclose the invention substantially as claimed above. Saito-Nakai, however, do not disclose the limitation of upon briefly right-click of said mouse, displays a text menu identifying said plurality of control functions on said display.

Roberts discloses the limitation of upon briefly right-click of said mouse, displays a text menu identifying said plurality of control functions on said display as the technique of the user can right-click with the mouse on the node name and obtain detailed information on that node. For example, if the user viewing a screen like Fig. 45 were to click on the "Age in 5 year intervals" box 26, the user may be presented with a screen like the one depicted in Fig. 46 (see col. 45, lines 35-40 and see Fig. 45-46) and the user can click a button on the group of buttons associated with control functions of: Breast Cancer, Risk Factor, Physical Hx, and Mammography (see Fig. 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Roberts' teaching of upon briefly right-click of said mouse, displays a text menu identifying said plurality of control functions on said display into that of Saito-Nakai combined invention. By doing so, the system would be

Art Unit: 2173

enhanced by providing control functions of menu buttons to an end user wherein the end user can easily perform by single click selection operation.

***Conclusion***

10. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach the medical diagnostic system which allowing user to retrieve any information from MRI (Magnetic Resonance Imaging), CT (Computerized Tomography), XRAY (X-ray radiographic), or PET (Positron Emission Tomography) for analyzing and editing based on user control manner.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG T THAI whose telephone number is (703) 308-7234. The examiner can normally be reached on 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Cabeca, can be reached at (703) 308-3116. The fax numbers for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238 (After Final Communication)

(703) 872-9306 (Official Communication)

(703) 746-7240 (For status inquiries, Draft Communication)

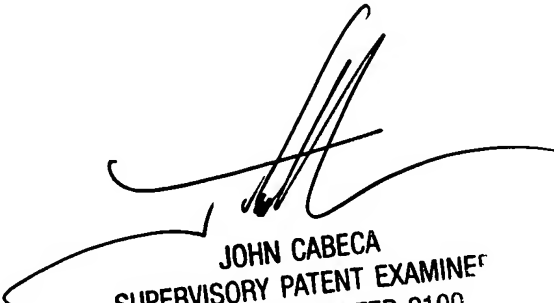
Art Unit: 2173

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8000.

CUONG T THAI  
Examiner  
Art Unit 2173

\*\*\*

May 14, 2004



JOHN CABECA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100